CLAIMS

1. A propulsion system comprising:

A. A propulsion unit comprising:

a) a base having an upper surface and a lower surface,

b) a carriage constraining assembly having an upper movable section and a lower stationary section, wherein the stationary section is rigidly attached to the upper surface of said base,

c) a carriage having an upper surface, a lower surface, a front end and a rear end, wherein the lower surface is rigidly attached to the upper movable section of said carriage constraining assembly,

d) at least two counterbalanced weights attached to the upper or lower surface of said carriage by an attachment means, wherein said weights are rotated in synchrony and in opposite directions by at least one weight driving means which is attached to said base or said carriage and is coupled to a power source by a coupling means,

e) a carriage to base locking means is activated by a sensor,

f) when said weights rotate from 90+/- 40 degrees to 180+/- 20 degrees said base moves in the opposite direction which is the desired direction of travel, the said locking means is activated during this time,

g) said weights travel a path that enables them to return to their initial position in relation to said base,

f) a forward stop and a rearward stop attached to said base positioned in relation to the ends of said carriage,

B. a payload platform rigidly attached to said base, wherein said propulsion system is operated in a mode 1 operating cycle as follows:

a) initially said propulsion system is stopped with no forward momentum, and said weights are located at 90+/- 40 degrees,

b) the mode 1 operating cycle commences when said power source is energized said propulsion system causing said weights to rotate in a non circular path in relation to said base which causes said base and payload platform to move forward as a ratio of said base and payload platform weight to the weight of the said weights, wherein the forward motion of said payload platform and base continues until said weights attain their maximum rearward travel which occurs at 180 degrees, at which time the forward motion of said payload platform stops, and

c) said weights continue to rotate in a non-proportional weight to carriage travel distance from 180 degrees past 360 degrees to 90+/-40 degrees, at which time said weights have attained their initial position, at 180 degrees in the mode 1 operating cycle, said carriage is decoupled from said base.

2. The propulsion system as specified in claim 1 wherein said carriage constraining assembly is comprised of a linear slide assembly having an upper movable section and a lower stationary section.

3. The propulsion system as specified in claim 1 wherein said carriage constraining assembly is comprised of a magnetically levitating constraining assembly.

4. The propulsion system as specified in claim 1 wherein said coupling means comprises a movable shaft.

5. The propulsion system as specified in claim 1 wherein said weight driving means comprises an electric motor.

6. The propulsion system in claim 1 wherein said power source comprises a rechargeable battery.

7. The propulsion system as specified in claim 1 wherein said power source comprises a nuclear battery.

8. The propulsion system as specified in claim 1 wherein said power source comprises an array of photovoltaic cells.

9. The propulsion system as specified in claim 1 wherein said power source comprises a fuel-burning combustion engine.

10. The propulsion system as specified in claim 1 wherein said weights are made of a high-density material having a specific gravity of at least 0.5 Gm/C.3 and that can be rotated either in a clockwise or counterclockwise direction.

11. The propulsion system as specified in claim 1 wherein said means for rotatably attaching the at least two counterbalanced weights to the upper surface of said carriage comprise a first motor attached to the upper or lower surface of said carriage and that is synchronized with said first motor to rotate in an opposite direction from said first motor which allows said weights to maintain a relationship that cancels the weight's lateral forces.

\ 12. The propulsion system as specified in claim1 further comprising a carriage to base locking means for locking said carriage to said base.

13. The propulsion system as specified in claim 12 wherein said carriage to base locking means comprises an electric solenoid that is activated by said power source.

14. The propulsion system as specified in claim 1 further comprising:

a) a second carriage constraining assembly having an upper movable section and a lower stationary section, wherein the upper movable section is rigidly attached to the lower surface of said base and the lower stationary section is attached to said payload platform.

b) a locking means for locking and unlocking said base to said payload platform during rotation of said weights, thus enabling said base to be coupled to the payload platform at appropriate times during a mode 1 and/or a mode 2 operation.

c) an external front stop which includes a damping means and an external rear stop attached to said payload platform and positioned in alignment with said front and rear stops, wherein the addition of a second carriage constraining assembly and said external front and rear stops, said propulsion system is operated in the mode 2 operation cycle as follows:

(1) initially said propulsion system is stopped and said weights are at 90+/-40 degrees,

(2) the mode 2 operation commences when said power source energizes said propulsion system causing the weights to rotate in a non-circular path in relation to said base, thereby allowing the propulsion system to move forward, said carriage and said weights are coupled via the carriage to base locking means and the second locking means that lock the said propulsion system to said payload platform during the time that the carriage and the said weights are traveling in the same direction during the operational cycle of the propulsion system, this action causes the payload platform to move forward because some of the kinetic energy of the said propulsion system has been coupled or transferred to the said payload platform, the said propulsion system initializes back to initial conditions thus permitting the operation of the said propulsion system to again repeat with an additional increment of velocity imparted to the payload platform, these additions of velocity are additive, and

d) the said mode 1 and mode 2 are operated simultaneously or alternately to restore the said propulsion system location in relation to the said payload platform.

15. The propulsion system as specified in claim 1 further comprising a means of rotating said propulsion system 360 degrees for other functions such as slowing down the said payload platform.

16. The propulsion system as specified in claim 1 wherein multiple propulsion systems are attached to said payload platform.